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American Society for Microbiology Provides 2020 Guidelines for Detection and Identification of Group B *Streptococcus*

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Maternal colonization with group B *Streptococcus* (GBS) is a primary risk factor for early-onset-disease (EOD) GBS infection in infants, and intrapartum prophylaxis reduces neonatal infection. The guidelines for GBS screening and intrapartum prophylaxis were last revised in 2010. In 2019, the CDC transferred stewardship of the GBS laboratory testing recommendations to the American Society for Microbiology. For the complete laboratory guidelines for GBS screening specimen collection and handling, organism detection and identification, and antimicrobial susceptibility testing (AST), we direct readers to the 2020 *Guidelines for the Detection and Identification of Group B Streptococcus* (1). Here, we highlight updates found in the 2020 GBS laboratory guidelines.

In 2019, the American College of Obstetricians and Gynecologists recommended antepartum screening for GBS during 36 0/7 to 37 6/7 weeks of gestation, a change from 35 to 37 weeks (2). Seven percent of U.S. births occur at or after 41 weeks (3). Shifting specimen collection 1 week later lengthens the 5-week predictive window of GBS screening tests to 41 0/7 weeks.

Best laboratory practices for GBS screening have not changed substantially since 2010. In the 2020 guidelines, culture remains the backbone of GBS detection. Methods for the identification of candidate GBS isolates from culture have expanded over the last decade. While biochemical testing and latex agglutination are acceptable for GBS identification, protein-based identification is ideal for laboratories with a matrix-assisted laser desorption ionization–time of flight mass spectrometry (MALDI-TOF) instrument. Advantageously, MALDI-TOF provides rapid and specific identification of *Streptococcus agalactiae* and enables its differentiation from group B antigen-agglutinating strains of *Streptococcus halichoeri* and *Streptococcus pseudoporcinus*, whose clinical significance in EOD is poorly understood (4). However, these identification methods, including MALDI-TOF, require an isolated organism, increasing the time to results compared to identification directly from enrichment broth.

GBS is predictably susceptible to penicillin and ampicillin, the primary antibiotics for intrapartum prophylaxis. For women with severe penicillin allergy, clindamycin is the preferred agent. However, *Streptococcus agalactiae* rates of resistance to macrolides and lincosamides can exceed 40%, necessitating AST on GBS isolated from women who

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are severely allergic to penicillin (5). Unless AST is automatically performed on all isolates, regardless of penicillin allergy status, a mechanism for clear communication to the laboratory must be established to identify which patients' isolates require AST.

Nucleic acid amplification tests (NAATs) performed after organism enrichment in broth medium are acceptable for the detection and identification of GBS. Indeed, recent studies report comparable or enhanced GBS sensitivity by NAATs after enrichment compared to culture (6–8). However, we recommend that all laboratories performing NAATs maintain culture procedures to permit AST for appropriate isolates.

Finally, the 2020 laboratory guidelines do not endorse direct-from-specimen GBS NAATs. Without enrichment, GBS NAATs suffer from poor sensitivity and a low negative predictive value (9, 10). Recent reports suggest that direct-from-specimen NAATs may inform additional prophylaxis in some situations but should not replace antenatal testing and risk-based prophylaxis (11). Evidence-based studies are required to determine when, how, and if direct-from-specimen NAATs are clinically beneficial. Currently, best-practice laboratory testing for GBS from screening specimens necessitates broth enrichment prior to NAAT or subculture.

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